



Stalker Speed Sensor II

User's Manual

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Regulatory Statement

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

Changes or modifications not expressly approved by Applied Concepts, Inc. could void the user's authority to operate the equipment.

Not intended or approved for Law Enforcement use in the United States.

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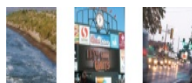


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1 Introduction

Applied Concepts provides a Sensor startup kit that includes cables and PC software that can be used to quickly connect a sensor up to a PC for testing and configuring the sensor. The sensor has many configuration settings that can be altered by the user to optimize the sensor performance for their particular application. For the details on the configuration registers, their use and their settings refer to the Speed Sensor II Technical Guide.

2 Connecting the Speed Sensor to the PC

Before connecting the sensor to the PC be sure to check which type of connection you want to make. The sensors can be connected using either a RS-232 port or RS-485 port. The developer's kit will ship with a cable for one or the other depending on which kit the user ordered.

If the kit being used is the RS-232 version it can be connected directly to a PC. If the PC does not have a 9 pin serial port connector then you will need to use a USB to serial converter which are available at most stores selling computer supplies.

Steps:

- Connect the Power/Data cable to the Speed Sensor.
- Connect the RS-485 to RS-232 converter to the DB9 connector if it is a RS-485 cable.
- Connect to the PC using the provided serial cable. This is a "straight-through" serial cable. (Do not replace it with a "null modem" cable which will swap the transmit and receive wires).
- Connect to power by plugging the power adapter into the AC line and then plug the power connector into the Power/Data cable. If using the DC power cable, then plug the cigarette plug into a 12VDC (nominal) power supply.





3 PC Application

3.1 Loading the Developer's Kit CD

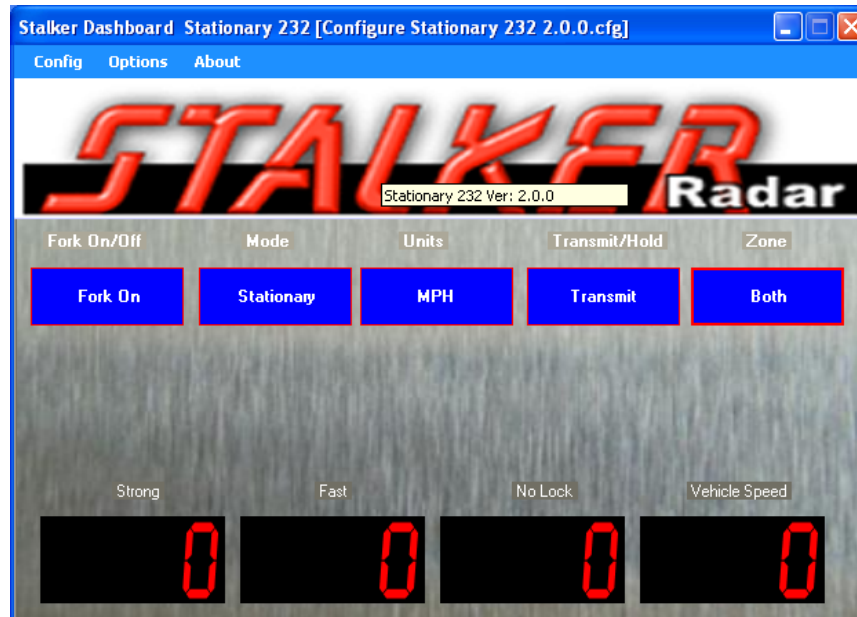
Insert the Developer's Kit CD in your PC, and the automatic installer should begin within a few seconds. Allow the install to complete normally by clicking on the prompts for default installation. The process installs the following items on your PC under C:\Program Files\Stalker and includes:

- Stalker Dashboard application that can be used to configure, monitor and control Speed Sensors.
- A .pdf version of this manual.
- Specifications for each of the Speed Sensor models.
- Configuration files for each of the models.
- Cable drawings for reference.

The installation process also creates a shortcut icon on the desktop for the Dashboard application. Several shortcuts to the installed items are created under the Stalker tab in the Windows Start Menu.

3.2 Polling for Speed Sensor ID

Once the sensor is connected to the PC and power is connected, double-click the Stalker Dashboard desktop icon to start the demo application. The main screen below appears.



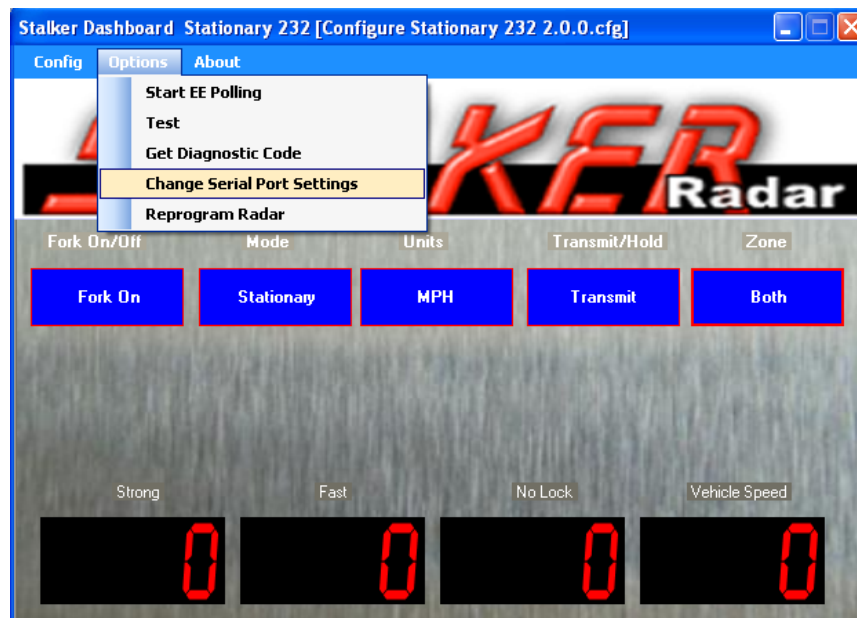
Place the mouse pointer over the S logo and a rollover pop up message displays the version of code loaded in the Speed Sensor (e.g. Stationary 232 Ver: 2.0.0). The display of this version is assurance that the unit is powered and communicating since the application must poll it to find out this information



3.3 Troubleshooting Communication Issues

If the version is blank when the Speed Sensor is polled as above, the unit is not communicating with the PC. The problem could be a power problem with the Speed Sensor or a communication link problem between the PC and Speed Sensor.

For suspected communication link problems or to change the serial port or the baud rate, click on "Options" in the main screen and select "Change Serial Port Settings" from the pull-down menu.



Change the Port setting to match the PC's serial port being used by the Dashboard application and the Baud rate to match the baud rate setting in the Sensor.



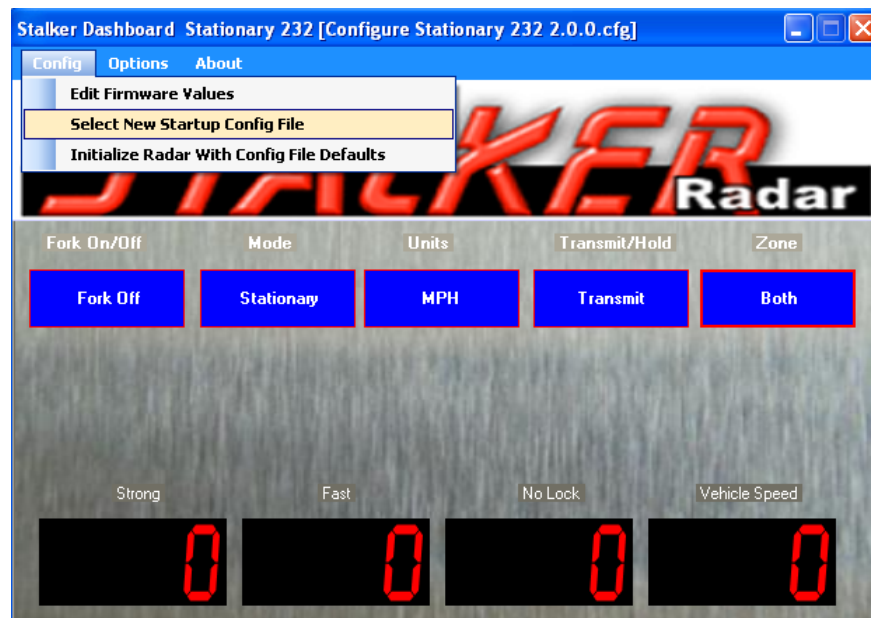


4 Configuring the Speed Sensor

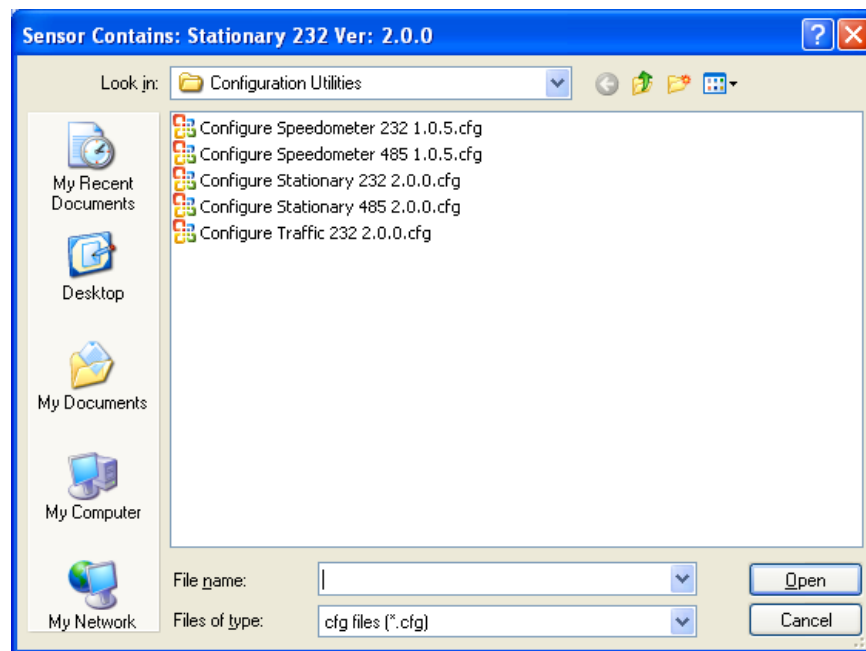
When viewing the main screen of the demo application, the name of a configuration file is displayed in the title bar (e.g. [Configure Stationary 232 2.0.0.cfg]). This file defines all of the configurable settings that are available on a particular model of Speed Sensor. Since features and settings are added and changed in different versions of software, the filename also includes the version (2.0.0) that the file's settings apply to.

The examples in this manual are for a generic version of the speed sensor. If you are testing a specific version of the sensor you may need to change to a configuration file sent with that speed sensor for the system to work properly. If you are using a different version of the speed sensor, with a different configuration file, not all of the options shown here may be available. Refer to that sensor's specific manual for its unique configuration controls.

If the filename is for a different unit, open a list of other available configuration files by selecting "Select New Startup Config File" from the Config pull-down menu.



The dialog box on the next page will open and allow for a selection to be made. **It is important that the model and software version in the configuration filename match the model and version in the Product ID.** The dialog box will contain the Sensor model and current software revision in the blue title bar.



If there are no .cfg files in the list, make sure the “Look in” window is set for the Configuration Utilities folder under C:\Program Files\Stalker – the standard installation location for these files, or C:\Program Files(x86)\Stalker for a 64 bit OS. If the correct file is still unavailable, a lower version number for that model will work, but it may not provide access to newer features. The matching configuration file is always available from Stalker. Contact us so we can send it to you.



4.1 Reading the Current Configuration

From the Config pull-down menu, select "Edit Firmware Values". The application will poll the Speed Sensor to read all the settings defined in the configuration file and then display the Configuration window below.



The settings are grouped by type and the different types can be selected by clicking on the appropriate tab. More tabs can be made visible by clicking on the left and right arrows next to the last tab on the right.



4.2 Changing and Saving the Configuration

The settings in the Speed Sensor can be changed by selecting other values from the settings' pull-down menus as shown below, for example, changing the units from MPH to km/H (Kilometers per Hour). Click the Options Menu and select the Upload Proposed Values to Sensor to save the settings changes to the Speed Sensor. The changes can be confirmed by observing that the Sensor Values are now equal to the Proposed Values.



When Upload Proposed Values to Sensor button is clicked, the Stalker Dashboard application sends separate commands to the Speed Sensor to set each value. The Speed Sensor responds to each command with its new or current setting value. The new settings are stored in the Speed Sensor's internal memory and are remembered even when the unit is turned off and back on.

If the Speed Sensor responds to the application with a value different from the desired value, an error may be seen as shown below.



This warning can be caused by these reasons:

- If the application tries to change a setting that is not defined for a particular model or version, the Speed Sensor returns the value "255" meaning that it does not understand the request. Make sure the application is using the correct configuration file and that all settings in the configuration file are applicable to that Speed Sensor model.
- If an illegal value is sent to the Speed Sensor, it ignores it and responds with a legal value. Some settings require the internal state machine of the Speed Sensor to run before the setting is actually changed. The Speed Sensor can respond to the application's command message before the state machine has run, so the initial response may not be the desired setting. Re-open the Configurations window after the warning to verify that the setting did actually change. These settings are Mode, Zone, Transmitter Control, Strong Lock, Fast Lock, Test and Fork Enable.
- Some settings are read-only settings, and the Speed Sensor will respond with its internal value regardless of what value was requested. These settings are Get Product ID and Get Current AGC Gain. Refer to the end of the Speed Sensor Configuration File section for details on controlling warnings caused by these settings.



4.3 Configuration Settings

There are many Speed Sensor configuration settings. Some apply to all Speed Sensors but others are specific to certain models. All settings for all models are described in detail in

- Basic Configuration
- Serial Port Configuration
- Target Recognition
- Target Filtering
- Speed Presentation
- Locking Targets
- Speed Alarm
- Audio
- TX Power Save
- Testing
- System

4.4 Changing the Baud Rate

Since the baud rate of the Speed Sensor and the baud rate of the Dashboard application must be the same for communications to work, use the following steps to change the baud rate.

- Open the Config Settings grid as described above and click on the Serial Port Configuration tab to see the serial port settings.
- Change the baud rate to the new desired value and save the setting. At this point the Speed Sensor and the Dashboard application are still communicating with the previous baud rate; the baud rate of the Speed Sensor has not changed yet.
- Turn the Speed Sensor off and back on to complete the baud rate change in the unit.
- Configure the Scoreboard application's baud rate to the new desired value as described in Section 3.3 above. You may need to close and reopen the application to complete the process.

4.5 Default Settings

There are two types of default values for the Speed Sensors. Factory defaults are hard-coded into the unit and can not be modified. Configuration File defaults are saved in the configuration files discussed above. They can be changed in the file and saved for custom user default values.

4.5.1 Factory Defaults

The factory defaults for each setting and each product are listed in Appendix D. To return all values to their factory defaults, perform the following sequence:

Turn the Speed Sensor off using the switch on the Programming Box.

Press and hold the red Reset button on the box (or ground the AUX pin) while turning the unit back on.

Release the red button after 2 or 3 seconds.

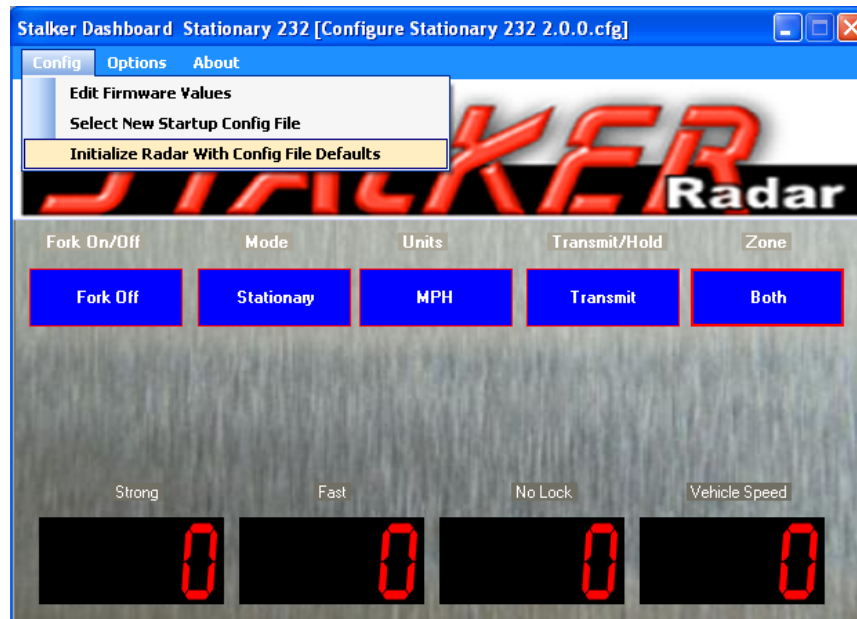
Turn the unit off briefly and then back on again.

Be careful using this method because all of the Speed Sensor's settings are changed back to factory defaults. If other settings had been configured for a custom application, they will need to be set again.

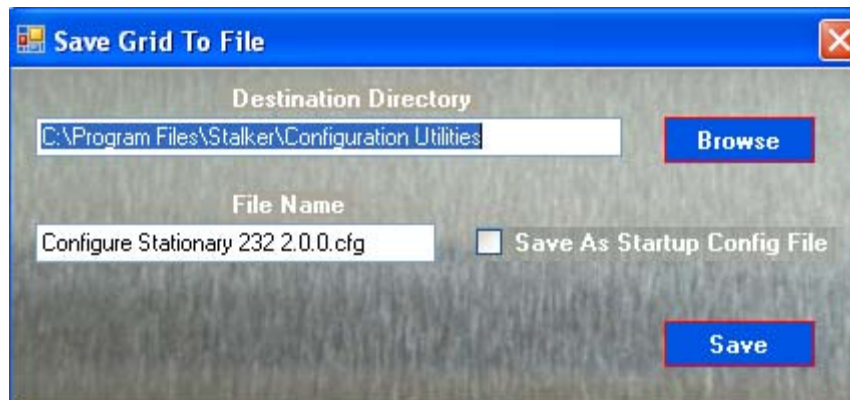


4.5.2 Configuration File Defaults

To configure the Speed Sensor with the default values in the currently selected configuration file, select the “Initialize Radar With Config File Defaults” from the Config pull down menu. Make sure that the desired configuration file is selected (as described in the beginning of Section 5) before initializing with defaults.



The default values in the standard configuration files available from Stalker Radar are equal to the factory defaults listed in Appendix D. If changes are made to values for a custom configuration, they may be saved as default values in a new configuration file for later use. Once all changes are made, select “Save Sensor Values To New File As Defaults” from the Options pull-down menu.

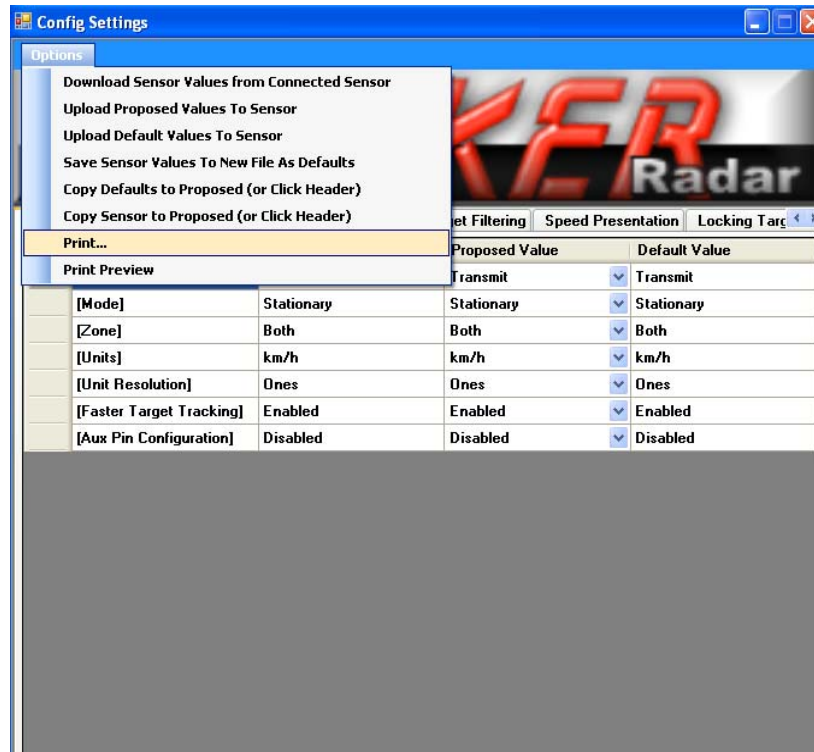


Save the new configuration file with a name describing the custom application. The next time “Select New Startup Config File” is selected from the Options pull-down, the new file will be available also. If the box above is checked for “Save As Startup Config File”, the newly created file name will appear in the title bar and that file is then used for the configuration tasks.



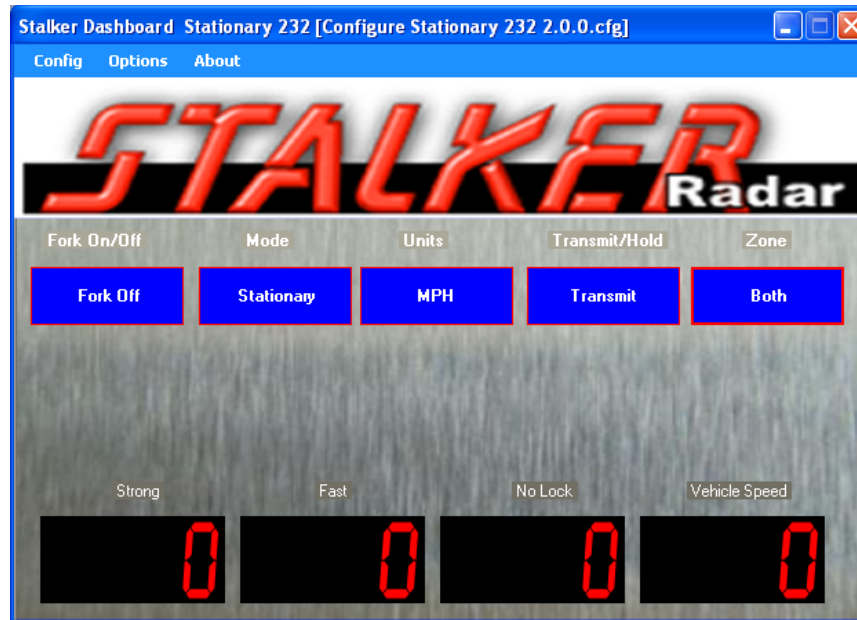
4.6 Printing Setting Values

The current configuration settings in a Speed Sensor can easily be printed for a record of values. A preview of the pages to be printed can be selected by clicking on "Print Preview". To print the pages, select "Print" from the Options pull-down menu. A Windows Print screen will appear for you to select a printer to print the file to. Select the desired printer or use the default printer. The table of configuration values will print with a header at the top of each page that shows the date, Sensor type, and software version.



4.7 Demo Application Soft Keys

When using the Stalker Dashboard application to communicate with the unit, several softkeys are available for configuration and control of the unit:



Fork On/OFF – Toggles the fork mode on and off. Used when testing with a tuning fork.

Mode – clicking this button alternates the mode of the unit between Stationary and Moving. This capability is only available in the Traffic Speed Sensor which has both modes of operation.

Units – Selects the type of units that the Sensor will output and be displayed in the speed windows.

Transmit/Hold – clicking this button turns on and off the radar transmitter. The status displays as Transmit or Hold.

Zone – When in Stationary mode, clicking this button cycles through the Away, Closing and Both zones. When in Moving mode, it alternates the zone between Same lane and Opposite lane.

Locking Speeds – Though not shown as a soft key, a Strong target or Fast target speed can be locked by clicking the window showing the desired speed to be locked. The locked speed will be shown in the Lock window. To clear the locked speed, click the Lock speed window.

4.8 Fork Test

A Fork Test can be run to ensure proper operation of a Speed Sensor radar. Tuning forks are calibrated to ring at a certain frequency that simulates a Doppler return from a moving object. Since they are not truly directional signals and since the radar normally filters out non-directional signals, a “fork mode” is provided to easily read tuning forks.

When the Fork Mode status on the demo application's main screen is On, strike a fork and hold it in front of the radar's lens to see its calibrated speed readout in the target window. If the speed stamped on the tuning fork matches the speed displayed, the radar is seeing targets and reporting them properly.



Fork Mode is automatically turned on for one minute when the Speed Sensor is powered up. This allows a quick fork test before the mode is automatically turned off and the radar again processes only directional targets. If a longer fork period is desired, turn on fork mode using the Fork Enable configuration setting (setting 47). When enabled in this manner, fork mode stays on for 10 minutes before it automatically turns off again.

4.9 Monitoring Speed Data

The radar transmitter must be on for the Speed Sensor to register speeds.

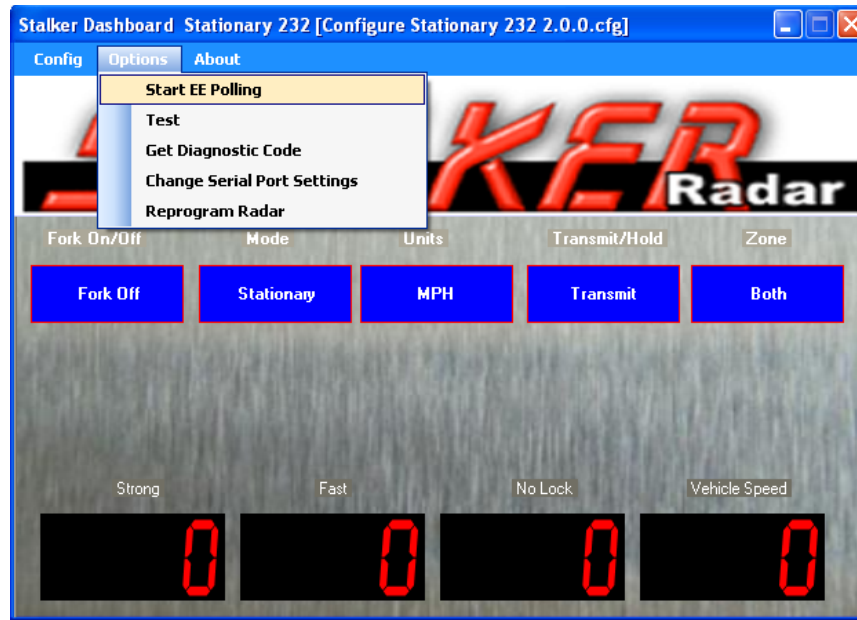
The demo PC application can be used to monitor speeds that the Speed Sensor detects. Other equipment or applications can also monitor the speed data from the unit by decoding the messages it transmits over the serial link.

Several message formats are available and can be selected. Refer to the Speed Sensor technical manual for the content and organization of the fields for the different formats. They vary from simple ASCII character strings to longer formats reporting multiple speeds and status information. There are also streaming formats and polling formats.

The RS-232 models can stream data in any format except EE which is reserved as a polling-only format. Whenever the radar transmitter is on, the Speed Sensor streams out speed messages in the selected message format at a fixed number of messages each second.

The RS-232 models can also communicate using the Format EE handshaking (or polling) method. Instead of automatically streaming data out, it sends a single Format EE speed message packet only when the controller asks for one. The Stationary Speed Sensor reports the strong target speed value, and the Speedometer and Traffic Speed Sensors report the vehicle speed value.

To enable Format EE polling, make sure the radar transmitter is on and that the Message Format is configured for EE. Then select "Start EE Polling" from the Options pull-down menu on the main screen as shown below. The Dashboard application will then begin sending EE Format Requests and displaying the values returned from the Speed Sensor. To stop the polling from the application, select "Stop Polling" from the same menu.

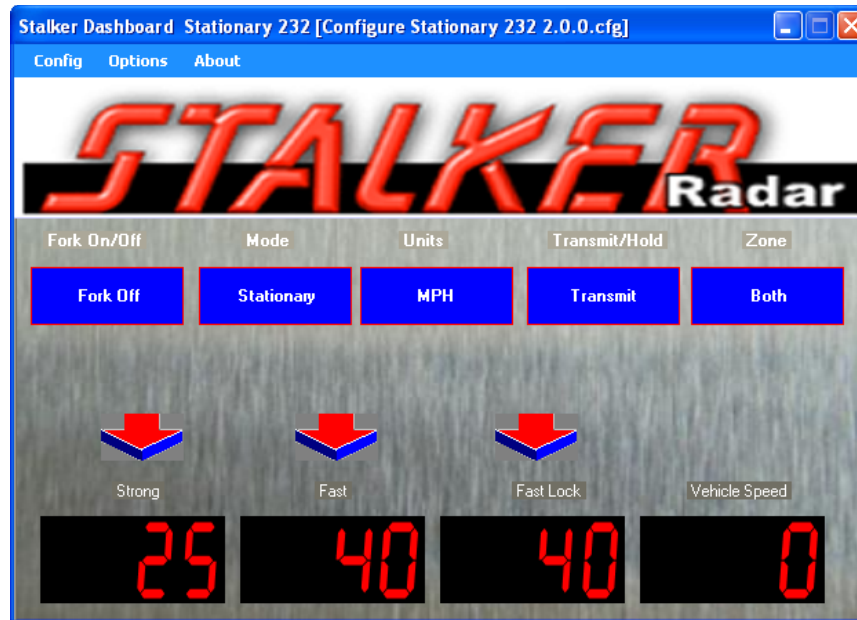


The RS-485 models can only use handshaking methods since they are always a slave on the link. They never send data unless the controller asks for it. They can communicate using Format EE polling as described above, but only if the unit's address is 2, the factory default.

The Stationary RS-485 model can also use the more flexible EA polling. With this method, the controller sends an EA request as described in Appendix B, and the Speed Sensor returns a single message of whatever Serial Port Output Format is selected. Since the EA request has address fields, the controller can poll any individual unit on a point-to-multipoint link and get back a speed report from only that unit. The Dashboard application does not support EA polling.

The Stalker Dashboard application displays the speeds it receives in the appropriate speed windows. For a Stationary Speed Sensor, the strongest target the radar sees shows in the STRONG window. If a faster, weaker signal is detected, it shows in the FAST window. And if either a strong or fast target is locked, that speed shows in the LOCK window. A Traffic Speed Sensor displays all of these speeds plus the vehicle speed in the VEHICLE SPEED window. The Speedometer Speed Sensor only reports vehicle speed which displays in the VEHICLE SPEED window.

In the example below, a Stationary Speed Sensor is reporting a strong target speed of 25 MPH and a faster target speed (which has been locked) of 40 MPH. Note the arrows above the speed windows. The down arrows signify that the targets are approaching the radar (closing speeds). Up arrows signify targets moving away (away speeds).



4.10 Logging Speed Data

When the Speed Sensor is sending speed data in the EE Format (the handshake protocol), the Dashboard application can log the data to a file for later review. This comma-delimited file lists each speed entry with a timestamp and can easily be imported to a spreadsheet or text editor. Logging is not enabled by default, so a few settings in the application's control file are necessary to get it started. Follow the steps below to enable logging:

- Locate the file named Dashboard.ini in the "C:\Program Files\Stalker\Dashboard\Application" folder.
- If the file is not in that location, right click on the demo application desktop icon and select "Properties" to open the properties window for the icon. Click on the Shortcut tab and look in the "Start in:" field for the location of the application executable file and the Dashboard.ini file.
- Open the Dashboard.ini file in any text editor such as WordPad or Notepad.
- Find the ENABLE_SPEED_LOGGING line and ensure the parameter is set =1.
- If logging of zero speeds is desired, set the LOG_ALL_SPEED_DATA parameter =1. If only non-zero speeds are desired, set it =0.
- Type in the desired name of the log file after the DATA_LOG_FILE parameter. The default is Speed Log.csv. The log file will be created in the same folder as the application executable and Dashboard.ini files.
- Set the polling interval with the EE_FORMAT_INTERVAL parameter. The number represents milliseconds between polls, and the default value is 100 ms (ten times per second).

To initiate logging, make sure the radar transmitter is on and that the Serial Port Output Format is configured for EE. Then select "Start EE Polling" in the Actions pull-down menu. To stop logging, select "Stop EE Polling". The demo application appends new data to the log each time the EE Format is started.



The file created is a comma delimited file and can be opened with a TXT program or Excel. The data will consist of date, time, speed and direction and look like this:

```
2012/09/24 12:35:39:131,32,1
2012/09/24 12:35:39:241,33,1
2012/09/24 12:35:39:381,33,1
2012/09/24 12:35:39:475,33,1
2012/09/24 12:35:39:569,9,-1
2012/09/24 12:35:39:709,10,-1
2012/09/24 12:35:39:803,11,-1
2012/09/24 12:35:39:897,11,-1
2012/09/24 12:35:40:006,12,-1
```

5 Configuring the Stalker Dashboard Application

The Stalker Dashboard application for communicating with and configuring Speed Sensors consists of a set of files which reside on the PC. The Developer's Kit CD provided with the Speed Sensor Programming Box Kits installs all of the files listed below (*in italics*) on the user's PC under the C:\Program Files\Stalker folder.

Stalker Dashboard.exe is the PC demo application executable file used to control and communicate with the Speed Sensors.

Dashboard.ini is the control file for the demo application.

These two files are installed in the C:\Program Files\Stalker\Dashboard\Application folder.

The executable file and the Dashboard.ini control file are used as a pair when the application is running. The executable file reads parameters from the control file during initialization. And the executable file also updates the control file during operation. For this reason, only one executable file in a folder should be run at a time. If more than one executable is running and trying to use the same Dashboard.ini file, the executables will interfere with each other.

It is possible to run more than one application at a time on one PC if, for example, there is another Speed Sensor connected to different serial port. Simply copy the executable file and the Dashboard.ini file to a different folder where they can run without interference.

There are also unique standard configuration files for each model and software version of Speed Sensor:

Configure Traffic 232 x.x.x.cfg is for a Traffic Speed Sensor version x.x.x.

Configure Stationary 232 x.x.x.cfg is for an RS-232 Stationary Speed Sensor.

Configure Stationary 485 x.x.x.cfg is for an RS-485 Stationary Speed Sensor.

Configure Speedometer 232 x.x.x.cfg is for an RS-232 Speedometer Speed Sensor.

Configure Speedometer 485 x.x.x.cfg is for an RS-485 Speedometer Speed Sensor.

These files are installed in the C:\Program Files\Stalker\Configuration Utilities folder.



5.1 Application Control File

The control file, Dashboard.ini, is an ASCII text file that may be edited with any text editor such as WordPad or Notepad. It has several control parameters that can be changed to affect the operation of the Speed Sensor application. See a copy of the file below with explanations of the parameters following.

```
[Stalker]
PORT=COM1
BAUD=9600

SOURCE_ID=1
DESTINATION_ID=2

CONFIG_FILE=C:\Program Files\Stalker\Configuration Utilities\Configure Stationary 232 2.0.0.cfg
CONFIG_FILE_LOCATION=C:\Program Files\Stalker\Configuration Utilities

GET_CFG_INTERVAL=5000
RESPONSE_TIMEOUT=500
RETRY=2

EE_FORMAT_INTERVAL=100

ENABLE_SPEED_LOGGING=1
LOG_ALL_SPEED_DATA=0
DATA_LOG_FILE=Speed Log.csv
```

PORT defines the PC serial port used for communication with the Speed Sensor. When the serial port is changed using the Options pull-down “Change Serial Port Settings” function, this parameter in the Dashboard.ini file is automatically changed. It can also be changed by editing the file. After the COM port is changed, the application needs to be closed and re-opened for the newly selected port to be used.

BAUD defines the baud rate to be used for communication with the Speed Sensor. As with PORT above, this parameter can also be changed via the Options pull-down “Change Serial Port Settings” function or by editing the file. And after changing the baud rate, the application needs to be closed and re-opened for the setting to take effect.

SOURCE_ID is always set to 1 and **DESTINATION_ID** is always set to 2. When communicating with a Speed Sensor, the application is always the master of the link (ID 1) and the Speed Sensor is always the slave (ID 2). Do not change these values.

CONFIG_FILE defines the Speed Sensor configuration file used during a session, and **CONFIG_FILE_LOCATION** defines the path to that file. These parameters are updated by the application when “Select New Startup Config File” is selected from the Config pull-down menu. The content of configuration files is discussed in detail in the next section.

GET_CFG_INTERVAL defines how often (in milliseconds) the application polls the Speed Sensor to update the status fields in the main window. This parameter applies to the status fields only (Units, Mode, Zone...) – not the speed windows. The default is 5000 ms (5 seconds). This parameter value can be increased to reduce the message traffic on the link.

RESPONSE_TIMEOUT is the time in milliseconds that the application will wait for a response from the Speed Sensor before a retry or failure. The default is 500 ms (½ second).

RETRY defines the number of times the application will resend a configuration setting to the Speed Sensor if it doesn't get a response.



EE_FORMAT_INTERVAL defines how often (in milliseconds) the application polls the Speed Sensor for a speed report in EE Format. Polling begins after selecting “Start EE Polling” from the Actions pull-down menu, and polling stops after selecting “Stop EE Polling”. The default value is 100 ms (1/10 second or 10 times per second). The value can be increased or decreased to speed up or slow down the rate of EE Format polling.

ENABLE_SPEED_LOGGING defines whether a speed log file is generated for the current session. Logging is enabled when the parameter is set =1 and disabled when set =0. Logging only takes place if the Speed Sensor's Serial Port Data Format is set for EE Format.

LOG_ALL_SPEED_DATA is used to inhibit logging 0 speeds. When set =1 all speeds are logged including 0 speeds. When set =0 only speeds above 0 are logged, and the length of the log file is reduced.

DATA_LOG_FILE defines the filename for the speed log. This file will be saved in the directory where the application file and the Dashboard.ini file reside.

5.2 Speed Sensor Configuration File

1. The Speed Sensor configuration files are also ASCII files which can be edited with a text editor. Stalker Radar provides a different file for each different model of Speed Sensor and for each different software version for each model. These standard configuration files define the settings from Appendix D that the application can control in a unit. A short portion of a configuration file is shown below. Note that the file is organized in a series of text blocks: three blocks in the example below.

```
Configure Stationary 232 2.0.0.cfg - WordPad
File Edit View Insert Format Help
[Transmitter Control]
PACKET_TYPE=1
COMMAND_ID=42
ANTENNA_NUMBER=1
VALUE_BYTES=1
DATA_TYPE=1
VALUE_MIN=
VALUE_MAX=
VALUE_ITEMS_DISPLAY=Hold, Transmit
VALUE_ITEMS_FIRMWARE=0, 1
DEFAULT_VALUE=1
DISPLAY=1

[Mode]
PACKET_TYPE=1
COMMAND_ID=1
ANTENNA_NUMBER=1
VALUE_BYTES=1
DATA_TYPE=1
VALUE_MIN=
VALUE_MAX=
VALUE_ITEMS_DISPLAY=Stationary
VALUE_ITEMS_FIRMWARE=0
DEFAULT_VALUE=0
DISPLAY=1

[Zone]
PACKET_TYPE=1
COMMAND_ID=2
ANTENNA_NUMBER=1
VALUE_BYTES=1
DATA_TYPE=1
VALUE_MIN=
VALUE_MAX=
VALUE_ITEMS_DISPLAY=Away, Closing, Both
VALUE_ITEMS_FIRMWARE=0, 1, 2
DEFAULT_VALUE=2
DISPLAY=1

For Help, press F1
```



The order of the blocks in the .cfg file determines the order in which the settings and their values will be displayed in the Configuration window. As long as the blocks are moved as units, they can be arranged in any order.

Blocks for the settings used most often could be placed at the top of the section so their values appear at the top of the Configurations window. Blocks for settings that are never used could even be deleted from the file to speed up the "Edit Firmware Values" process. We recommend copying the standard file provided by Stalker Radar to a file with a new name before making changes. In that way, many custom configuration files can be created for different uses, and the standard file is always available to fall back on for complete control.

Each block represents a different configuration setting and has the following format:

```
[Transmitter Control]
PACKET_TYPE=1
COMMAND_ID=42
ANTENNA_NUMBER=1
VALUE_BYTES=1
DATA_TYPE=1
VALUE_MIN=
VALUE_MAX=
VALUE_ITEMS_DISPLAY=Hold,Transmit
VALUE_ITEMS_FIRMWARE=0,1
DEFAULT_VALUE=1
DISPLAY=1
```

The first line in the block defines the name of the setting in brackets. This is the setting description that displays in the left column of the Configurations screen, and it can be changed to any name desired.

PACKET_TYPE should be set =1. Do not change this value. It is used in the Packet Type field of the Configuration Protocol described in Appendix E when the application is building commands to send to the Speed Sensor.

COMMAND_ID is the Setting ID (in decimal format) from Appendix D that corresponds to the setting description.

ANTENNA_NUMBER should be set =1. Do not change this value. It is used in the Antenna Number field of the Configuration Protocol described in Appendix E when the application is building commands to send to the Speed Sensor.

VALUE_BYTES is the number of bytes that the setting value uses. Do not change this value from the value provided in the standard configuration files from Stalker Radar.

DATA_TYPE controls the behavior of the value fields. When set = 1 (list type), only the values listed in VALUE_ITEMS_DISPLAY are valid. When set = 2 (free-form numeric type), in addition to the values in the list (if any), the user can also enter any numeric value in the range from VALUE_MIN through VALUE_MAX.

VALUE_MIN defines the minimum acceptable value when DATA_TYPE=2.

VALUE_MAX defines the maximum acceptable value when DATA_TYPE=2.

VALUE_ITEMS_DISPLAY defines the text that will appear as pull-down selections in the row for a given setting in the Configurations window. The values are separated by commas with no spaces and may be set to any desired text.

VALUE_ITEMS_FIRMWARE defines the actual values the application uses to communicate with the Speed Sensor. These values are also separated by commas, and the order correlates on a

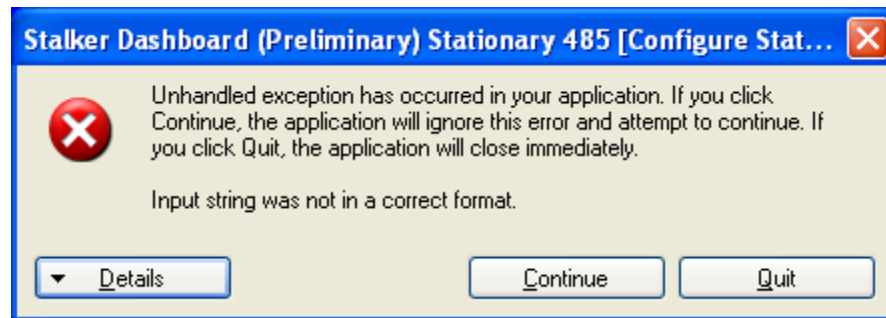


one to one basis with the order of the list for VALUE_ITEMS_DISPLAY. The available values for each setting are defined in Appendices C and D.

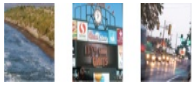
DEFAULT_VALUE is the default value described in the Configuration File Defaults section. It may be set to any legal value for the setting – either from the VALUE_ITEMS_FIRMWARE list or between VALUE_MIN and VALUE_MAX.

DISPLAY defines whether the setting is displayed in the Configurations screen. When set =1, the setting is displayed. When set =0, the setting is not displayed. This method can be used to skip displaying settings of no interest without having to delete the whole block from the file.

For most commands, the Speed Sensor is able to change the setting and report the new, desired value. However, some settings are only used for polling or monitoring the status of the unit and cannot actually change the setting in the unit. For these read-only settings, the Speed Sensor still sends a response, but it responds with the internal setting value and may result in the application program displaying the following screen.



These settings are #37 Get Product ID and #50 Get Current AGC Gain. Ensure that the DISPLAY parameter for these settings = 0 so that the application will not try to change them and generate a warning. Choose Continue to finish the operation but make the necessary change to the configuration file to prevent the warning from appearing again.



5.3 Software updates

The Dashboard program has the unique ability of uploading new software to Speed Sensors with version 2.0.0 or later code already installed. If your Speed Sensor has software that is earlier than 2.0.0, other PC Applications located on the Program CD can be used for communicating to the Speed Sensor. Check with the factory to determine if version 2.0.0 is available for your type of Speed Sensor. If software version 2.0.0 is available, the Sensor can also be sent to the factory for upgrading to the latest program. This section details the process of uploading a new software program to your Speed Sensor.

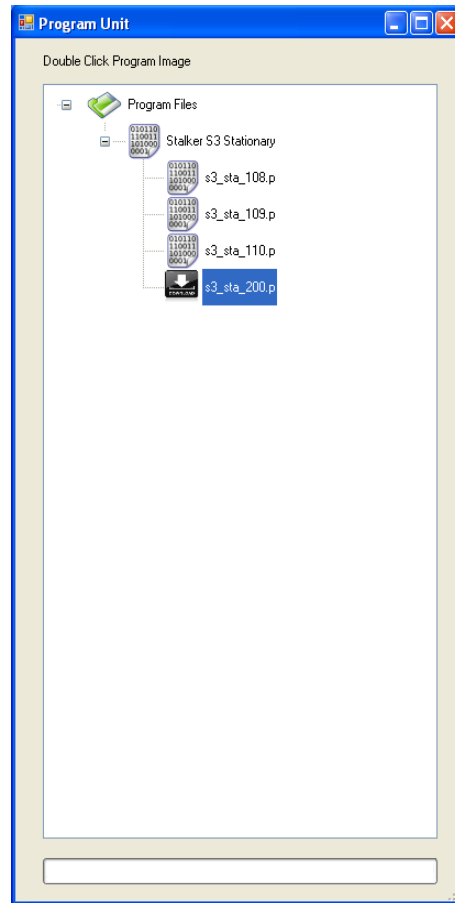
Checking for a new version of software:

Contact the Customer Service Department at Stalker Radar and inquire about a new version of software. Please have your current version available when asked so it can be determined if there is a new load for your Sensor. A new version can be sent by email and will install on your hard drive under C:\Program Files\Stalker\... in a sub folder that groups the different versions together. The dashboard version number can be found by clicking on About in the main menu bar.

Dashboard Setup

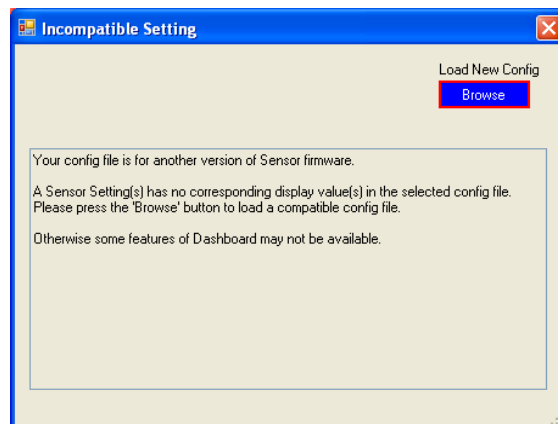
Once the new code has been saved to your hard disk, open the Dashboard program. Click on the "Options" menu and then click on "Reprogram Radar". A new window will appear as seen below. Follow the instructions to determine which type of Sensor you have. Click on the appropriate selection box for your radar in the upper right corner of the screen. Click on "OK" to proceed.

Another window will open to show the available files that can be uploaded to the sensor. Select the program that is to be uploaded to the unit, in this case "s3_sta_200.p" located under the Stalker S3 Stationary section, see picture below. In this example, this program is the latest version available for the Stationary type of Sensor. The folder structure may vary by system. Double click on the icon of the desired version and click on "Ok" on the popup window. The program will start to upload the code and a progress meter will show at the bottom of the window. Programs for the RS485 versions of the Speed Sensor will have the number "4" in the filename just before the revision number, e.g. "s3_sta4_200.p".



When the upload is complete, another popup window will appear to announce a successful upload.

One of the other types of Sensors, Speedometer or Traffic, may be installed in the Sensor as well but the proper configuration file will need to be applied for proper operation. If the configuration is incorrect for the program just uploaded, a warning screen will appear and allow you to browse for an appropriate configuration.





6 FCC Requirements

This device is approved as an intentional radiator under FCC Part 15 with FCC identifier IBQACMI007.

No additional licensing is required to operate this device.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.